

RESEARCH DEPARTMENT

**ACOUSTIC TESTS IN DUBBING SUITE NO. 2 TELEVISION
CENTRE EAST BLOCK**

Technological Report No. B-089/7
UDC 534.861.1 1966/68

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SUMMARY

The second Dubbing Suite, which consists of a Dubbing Theatre and its Recording and Mixer Rooms, has recently been completed in the East Block of Television Centre. Measurements of reverberation time, background noise level and sound insulation were made in this Suite of three rooms. Section 2 gives the results obtained and their implications are discussed in Section 3.

1. INTRODUCTION

Acoustic tests were made in the Theatre, Mixer and Recording Rooms of Dubbing Suite 2 in order to assess the extent to which the design requirements had been met in the recently completed Suite. The results given in this report have already been communicated to Building Department and to the Television Service.

2. MEASUREMENTS IN THE EAST BLOCK, TELEVISION CENTRE.

2.1. Reverberation Times

The reverberation times measured in the Dubbing Theatre and the Mixer Room are shown as curves (a) and (b) in Fig. 1. Since the Recording Room floor space is almost completely occupied by technical equipment, it was thought unnecessary to measure the reverberation time in this room. In both the Theatre and the Mixer Room the reverberation times are rather shorter than the design figures at frequencies above 125 Hz.

2.2. Noise levels

The octave-band analyses of the noise levels measured in the Dubbing Theatre, the Mixer Room and the Recording Room are shown in Fig. 2. It will be noted that the noise levels in all three rooms are excessive and that in the Theatre exceeds the criterion curve by up to 11 dB. Ventilation noise was the only prominent noise audible in these areas.

2.3. Sound Insulation

The sound insulations from the Theatre to the

Mixer Room, from the Theatre to the Recording Room and from the Mixer Room to the Recording Room are given in Figs. 3 and 4, together with the appropriate criterion curves. From the figures it will be seen that in no case is the insulation up to normally accepted standards and that the attenuation from the Recording Room to the Mixer Room fails by up to 24 dB, Fig. 4.

3. DISCUSSION OF RESULTS AND RECOMMENDATIONS.

3.1. Reverberation Times

The reverberation times at frequencies above 180 Hz are shorter than the optimum value in both the Theatre and the Mixer Room. The Theatre will probably be satisfactory but it may be advisable to remove some of the absorbing units from the Mixer Room.

3.2. Sound Insulation

No obvious leakage paths could be found to account for the somewhat poor insulation between the Theatre and the Mixer Room and between the Theatre and the Recording Room. Should the insulation prove inadequate in service, a detailed investigation will have to be undertaken to locate the reason for the failure. At the time of writing, no complaints have been received, but they may arise if it is ever necessary to use higher monitoring levels in the recording room. The poor insulation between the Recording Room and the Mixer Room is probably caused by poor sealing of the parallel-action double doors in combination with the large fraction of the common wall which consists of observation window and double doors.

3.3. Background Noise

The noise levels in all three rooms exceed the permissible levels and have clearly been unsatisfactory in use as evidenced by the presence of the ventilation contractors who proceeded to mod-

ify the system during our visit. Lack of time precluded measurements of ventilation noise after modifications had been made, but listening tests suggested that the modifications were not sufficient to produce a satisfactory reduction in ventilation noise.

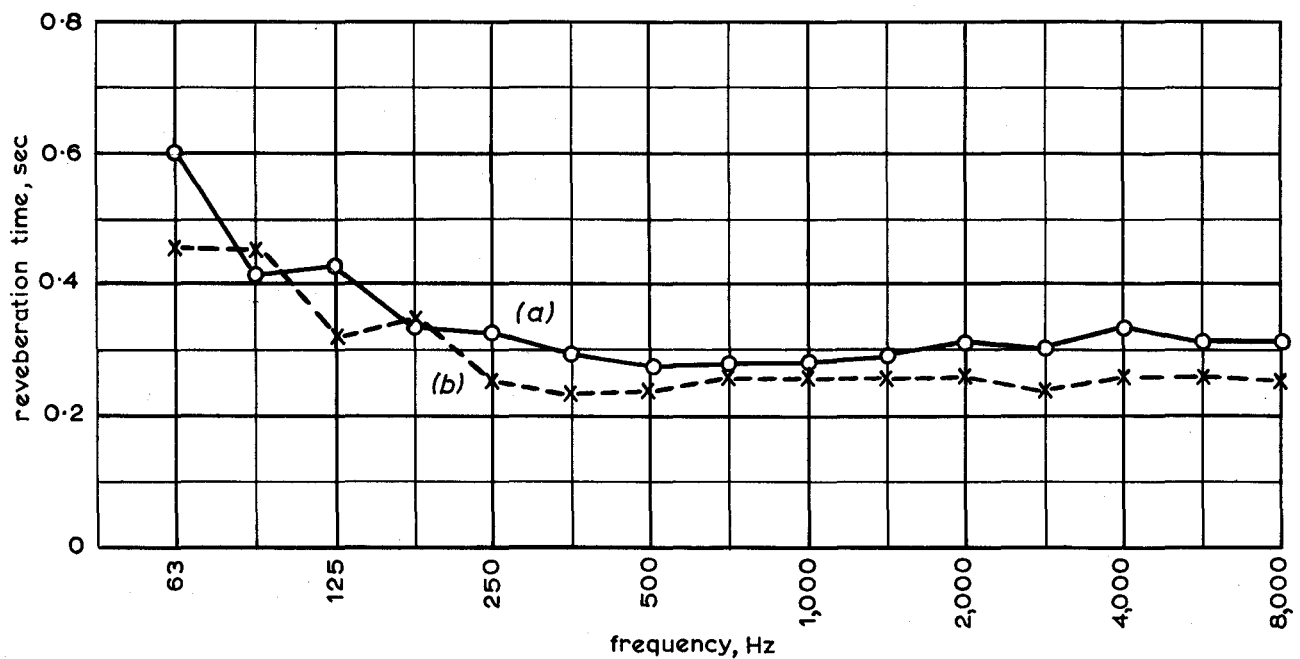


Fig.1 Reverberation times.

- (a) Dubbing Theatre
(b) Mixer Room

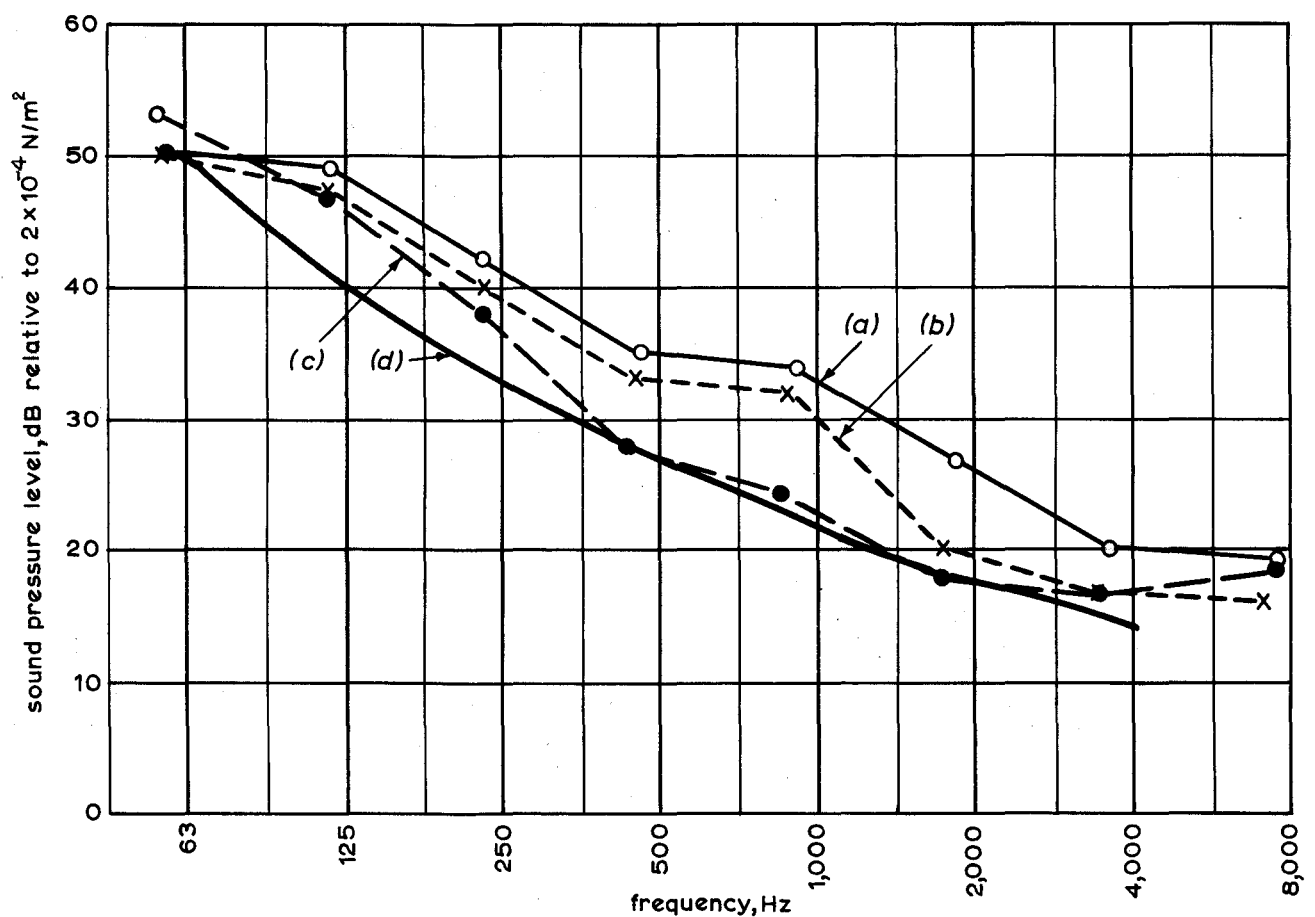


Fig.2 Noise levels

- (a) Dubbing Theatre
(b) Mixer Room
(c) Recording Room
(d) Criterion Curve

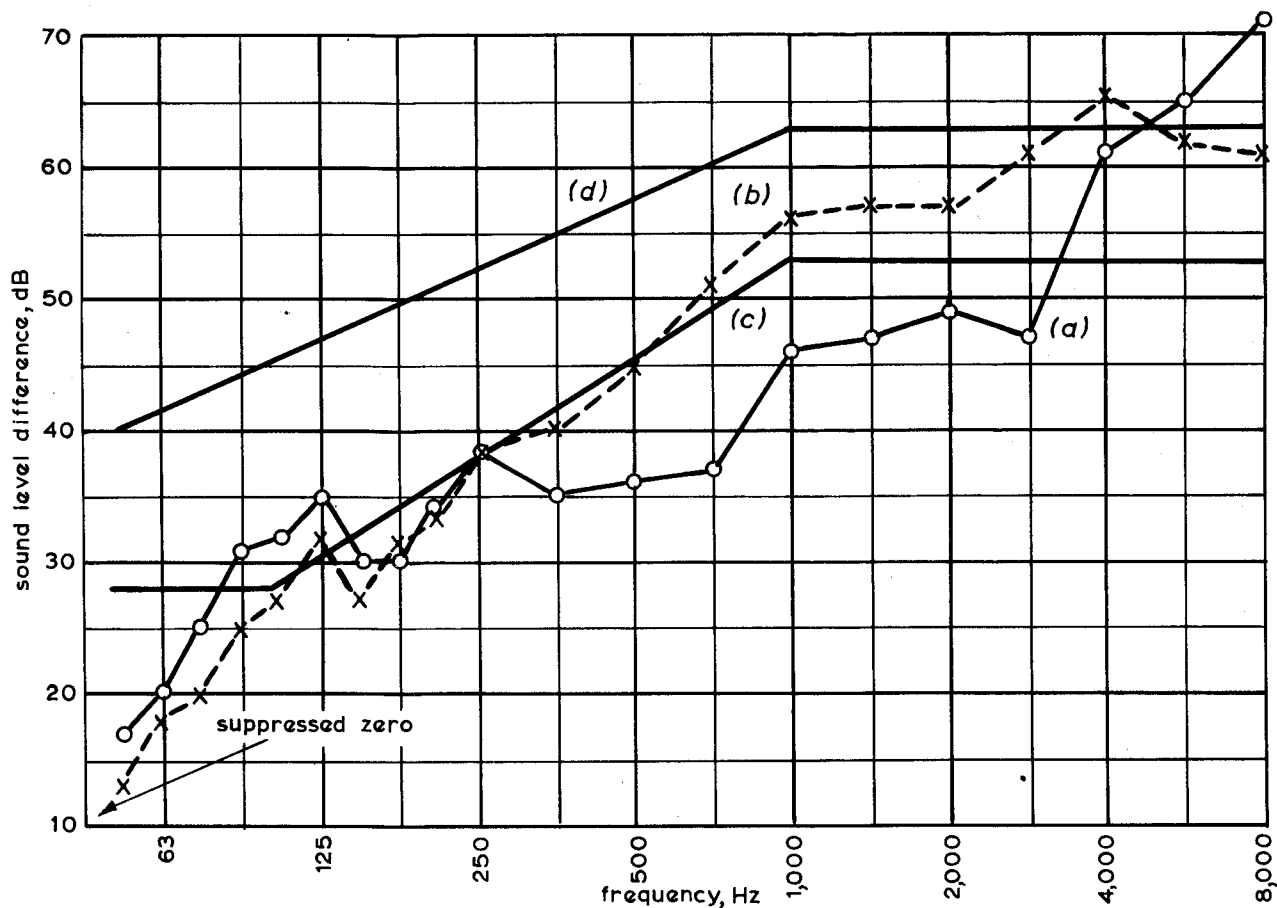


Fig. 3 Sound level differences.
 (a) Dubbing Theatre to Mixer Room
 (b) Dubbing Theatre to Recording Room
 (c) Required Insulation Studio from Recording Room
 (d) Required Insulation Studio from own cubicle

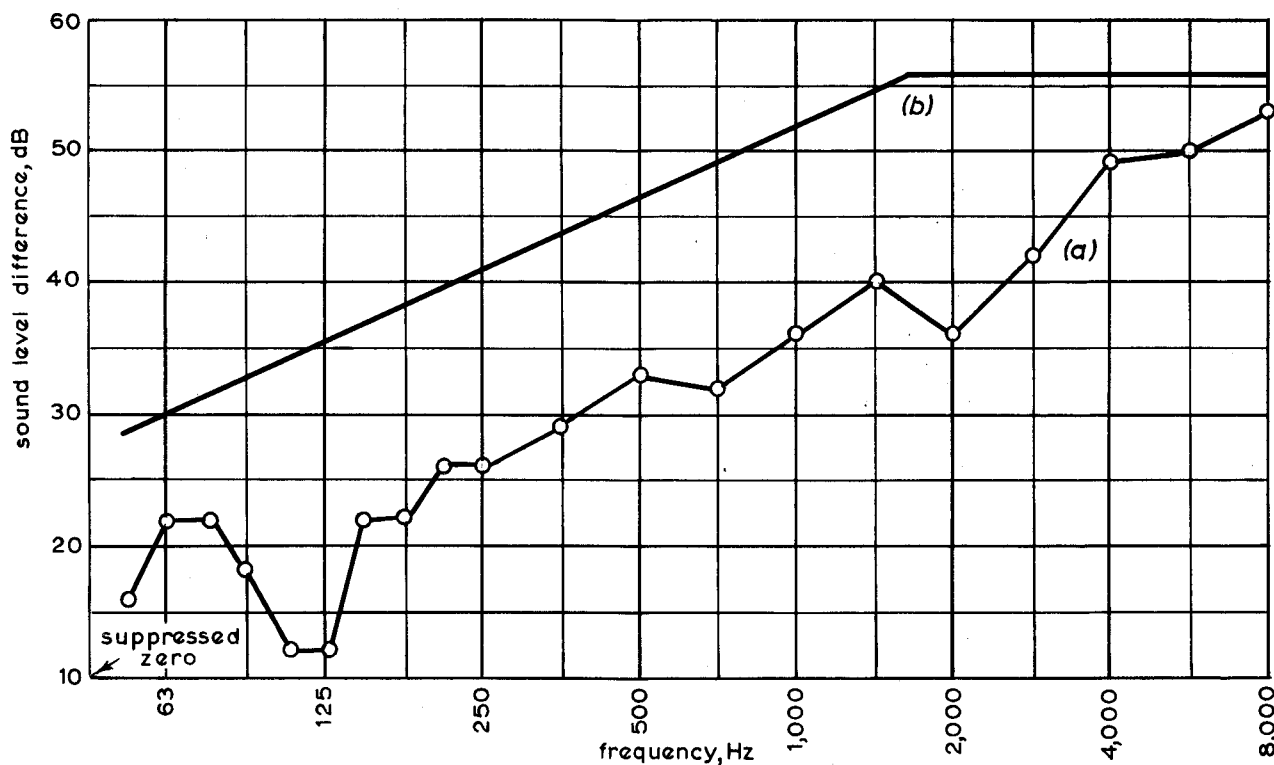


Fig. 4 Sound level difference between Recording Room and Mixer Room
 (a) Measured figures
 (b) Criterion curve